Critique of Silva's 'Philosophy, science, theory: interrelationships and implications for nursing research.'

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Abstract:
Nurses have made strides in increasing the understanding of the relationships among philosophy, science, and theory since Mary C. Silva first proposed examining their connection in an article written in 1977. Researchers have come to recognize the twofold nature of interpretation and the necessity of using philosophy in addition to scientific methods to fully understand this aspect of nursing research. Nurses are taking a more integrative approach to their work.

Article:
"When nurse researchers examine the total philosophy-science-theory triad, they develop a more holistic and less traditional approach to the possibilities of deriving nursing knowledge. They are more open to contributions of other disciplines and less likely to see the research process as though through a glass darkly" (Silva, 1977).

It has been two decades since Silva (1977) questioned nursing's "singular approach to the study of nursing knowledge" (p.62). In presenting a review of the relationship between philosophy, science, and theory, Silva criticized the use of the scientific method as the only source of nursing knowledge. By failing to use philosophical introspection and intuition, "truth" was being denied. Nursing scholarship has matured in the past 20 years with increasing integration of philosophy, science and theory in ways that Silva admonished. Silva criticized single-paradigm nursing science and encouraged pluralism and critical thinking through examining relationships among philosophy, science and theory.

Silva stated, "Ultimately, all nursing theory and research is derived from or leads to philosophy" (p.61). She envisioned an integrative and dialogical approach so that ontology, epistemology, aesthetics, and ethics could enrich and shape theoretical and scientific research. When she wrote--philosophy had been all but dismissed in academic nursing research as irrelevant to theory and research--she critiqued narrow positivistic and technical nursing science that focused only on deductive experimental research. Given that many nursing concerns cannot be addressed by narrowly defined experimental research, and given that nursing research had not yet developed a

sufficient descriptive research base to guide wise and focused experimental research, this was good advice.

Silva sought to open an academic dialogue about philosophical thinking required before and after the work of the scientist. She also encouraged nurses to consider the moral implications of scientific research. Guba and Lincoln (1994) use the term post-positivism to reflect the gradual onto logic and epistemologic changes that have occurred over the past several years. Because multiple realities always exist in any given situation, pluralism requires reflection, introspection, and dialogue among different social realities.

Perhaps most controversial was Silva's defense of introspection and intuition as valid aspects of discovery and generation of knowledge. At the time the article was written, in 1977, scientific assessment was pitted against intuition, as if intuition and assessment were either/or oppositional choices and as if intuitive grasp played no part in discovery and problem solving.

Mathematicians and scientists had long recognized the importance of intuition and introspection for discovery and for "seeing" creative solutions to problems. Nurses entering academia were struggling to legitimize their knowledge in "male-stream" ways, and perhaps were too enthusiastic about making even the nonrational aspects of rationality fit a narrowly conceived but widely endorsed form of rational calculation.

Silva's article framed rationality in broader philosophic terms. She asserted that intuition and reflective thought are legitimate tools of rational thought. Her call to push theorizing beyond narrowly-defined operational definitions was a bold call for nurses to think creatively about science, philosophy, and theory. In response to other scholars (Riehl & Roy, 1974; Gortner, 1974) who had stated that "the logic of science is closed to intuition," Silva pointed to the ways that discovery requires intuitive and introspective thought. Since 1977, the role of intuition has been examined in expert nursing practice (Benner, Tanner, & Chesla, 1996; Burnard, 1989; Leners, 1993; Pyles & Stern, 1983; Rew, 1988; Rew & Barrows, 1987) and is more easily recognized as the discovery side of science.

Distinctions between the human and physical sciences have also become clearer since 1977. Philosophers and scientists now acknowledge interpretive aspects to both the physical and human sciences (Hiley, Bohman, & Schusterman, 1991). Silva was arguing against the view that it is possible to separate theory and method. She asserted that philosophy was needed to examine the ways that methods--including operational definitions--were interpretations. Silva asserted that philosophy, theory, method, and research are inter-related regardless of whether scientists are explicitly aware of the nature of the interrelationships.

The view that science can somehow stand outside of and apart from other forms of human knowledge has been all but abandoned since 1977 and interest in the linkages and distinctions among them have continued to increase. It now seems self-evident that scientific methods serve as theoretical screens that are as powerful as explicitly stated theoretical frameworks in scientific studies. This interpretive turn (Hiley et al., 1991) has called for increased philosophical sophistication in both the human and physical sciences. The human sciences are now more definitively separated from the physical sciences as being doubly interpretive.

The human sciences are doubly interpretive because scientists' methods and interpretations shape research questions and findings, and because the subject being studied (for example-- behaviors, beliefs, attitudes) can be changed by reflecting on research findings. This doubling is notably true in economics where a theory of the market may influence human responses to the market. But it is also true in interpretive nursing studies as well. This doubly interpretive aspect of the human sciences, called human reflexivity, can be contrasted with the role of interpretation in the physical sciences where the nature of the object being studied does not alter as a result of scientific discoveries, though the object under scientific scrutiny may appear radically different to investigators using different theories and methods.

Silva in 1977 called attention to the fallibility and the problematic nature of the truth claims in science and admonished increased philosophical scrutiny about the fallibility of science. The "science" that Silva characterized was a mechanistic and atomistic science closed to philosophical questions outside its own epistemology. She did not question the predominant definitions of science framed exclusively in terms of explanation and causal relationships.
In 1977, Silva could more easily call attention to the role of description and understanding in the human sciences as being legitimate scientific endeavors. Nurse researchers have continued experimental research in the natural sciences and have developed a richer base in the human sciences. Nursing science, theory, research, and philosophy are developing an integrative science about inter-relationships among person, environment, body, mind, and health. This growth depends on opening the borders among philosophy, science, and theory.

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